REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 40-58 are presently active in this application; Claims 40-46, 48-52, and 54-58 having been amended by the present amendment.

In the outstanding Office Action the drawings were objected to as failing to comply with 37 CFR §1.84(p)(5); Claims 40-58 were rejected under 35 USC §112, first paragraph, as failing to comply with the written description requirement; Claims 42-43, 45, 48-49, 51, 54-55, 57-58 were rejected under 35 USC §112, second paragraph, as being indefinite; Claims 40-41, 46-47, 52-53 were rejected under 35 USC §102(b) as being anticipated by Nakamura, Takashi et al (Japanese Pat. Application KOKAI Publication No. 4-270983, hereinafter called "Nakamura"); Claims 42, 48 and 54 were rejected under 35 USC §103(a) as being unpatentable over Nakamura as applied to Claims 40, 46 and 52 above and further in view of Sheehan et al (U.S. Patent 5,601,084, hereinafter called "Sheehan"); Claims 43, 49, 54, 55-56 were rejected under 35 USC §103(a) as being unpatentable over the combination of Nakamura and Zhu et al (U.S. Patent 6,236,738, hereinafter called "Zhu"); Claims 44, 50 and 57 were rejected under 35 USC §103(a) as being unpatentable over the combination of Nakamura and Yamazaki, Nobuo (Japanese Pat. Application KOKAI Publication No. 4-270983, hereinafter called "Yamazaki"); and Claims 45, 51, 58 were rejected under 35 USC §103(a) as being unpatentable over the combination of Nakamura and Yamazaki and further in view of Sheehan.

In response to the objection to the specification, the informality noted has been corrected herewith. Further, the specification has been reviewed, and contrary to the finding stated in the outstanding Office Action that "the specification is replete with grammatical errors too numerous to mention specifically," in fact the specification is deemed to be easily understandable and not replete with errors. If the Examiner has specific corrections in mind,

the Examiner is invited to telephone the undersigned who will be happy to work with the Examiner in a joint effort to derive a mutually satisfactory specification.

In response to the drawings, the informalities noted have been corrected herewith.

In response to the rejection of Claims 40-58 under 35 U.S.C. §112, first paragraph, these claims have been amended to overcome the rejection. The amended claims find support in the specification at pages 83, lines 16 to page 99, line 14, particularly, page 83, lines 16 to page 84, line 5, page 87, line 5 to page 88, line 20, page 90, line 6 to page 83, line 9, and page 95, line 11 to page 96, line 14. No new matter has been added. Accordingly, the rejection under 35 U.S.C. §112, first paragraph, is believed to have been overcome.

Claims 42-43, 45, 48-49, 51, 54-55, 57-58 are rejected under 35 U.S.C. §112, second paragraph, the claims have been amended to clarify the claimed invention. No new matter has been added. Accordingly, the outstanding rejection based on 35 U.S.C. §112, second paragraph, is believed to have been overcome. Accordingly no further rejection on that basis is anticipated. If however, the Examiner disagrees, the Examiner is invited to telephone the undersigned, who will be happy to work with the Examiner in a joint effort to derive mutually satisfactory claim language.

Before discussing the several grounds for rejection on the merits, it is believed that a brief review of Applicants' invention would be helpful.

Applicants' invention as recited in Claim 40 is directed to a heart function analysis apparatus, which includes a division unit configured to divide the cardiac wall contour of each of the heart images into a plurality of cardiac wall contour divisions at a plurality of division points, using a point having a structural feature of the heart as a reference, and a division point corresponding unit configured to correspond first division points of the cardiac wall contour of one of the heart images to second division points of the cardiac wall contour of the other of the heart images between a plurality of time phases. In other words, the cardiac wall contour is divided into a plurality of cardiac contour divisions at a plurality of

division points, using a structural feature point of the heart as a reference, and the division points of the cardiac contours of a plurality of time phases are corresponded to each other.

Nakamura discloses a SPECT tomograph including means for extracting from a number of cardiac pool tomograms a contour of left ventricle of a tomogram corresponding to an end of diastolic (ED) and an end of systolic (ES), superposing the contours of the same slices in ED and ES, and calculating a distance from a center of the heart to the contour of the tomogram of each of ED and ES for each slice tomogram, to calculate a kinetic momentum of the left ventricle wall. However, Nakamura does not teach the claimed features of dividing a cardiac wall contour into a plurality of cardiac wall contour divisions at a plurality of division points, using a point having a structural feature of the heart as a reference, and corresponding first and second division points of the cardiac wall contours between time phases. Accordingly, the rejection of Claims 40-41, 46-47, 52-53 under 35 USC §102(b) as being anticipated by Nakamura is traversed.

Sheehan discloses a method for imaging and three-dimensional modeling portions of the heart, particularly the left ventricular endocardial and epicardial surfaces, using imaging data. Sheehan fails to cure the above noted deficiencies in Nakamura. Accordingly, it is respectfully submitted that the rejection of Claims 42, 48, 54 under 35 U.S.C. §103(a) as being unpatentable over Nakamura in view of Sheehan is also traversed.

Zhu discloses a method for nonrigid cyclic motion analysis using a series of images covering the cycle, acquired from phase contrast magnetic resonance imaging. The Zhu method is based on fitting a global spatiotemporal finite element mesh mode to motion data samples of an extended region at all time frames. Zhu fails to cure the above noted deficiencies in Nakamura and Sheehan. Accordingly, the outstanding rejection of Claims 43, 49, 54, 55-56 under 35 U.S.C. 103(a) as being unpatentable over the combination of Nakamura and Zhu is also traversed.

Yamazaki discloses an ultrasonic color Doppler tomograph for acquiring kinetic momentum of cardiac muscle and vessel wall in a real time using an ultrasonic signal and

displaying it in color, to evaluate depression of them in quantitative manner and high precision. Yamazaki does not teach dividing a cardiac wall contour at a plurality of division points, using a point having a structural feature of the heart as a reference, and corresponding division points of the cardiac wall contours between time phases. Accordingly, Yamazaki does not cure the deficiencies of Nakamura, and the outstanding rejection of Claims 44, 50, 57 under 35 U.S.C. 103(a) as being unpatentable over Nakamura and Yamazaki is also traversed.

As explained above, none of the applied references teach dividing a cardiac wall contour using a structural feature of the heart and corresponding division points of the cardiac wall contours between time phases. Accordingly, each ground for rejection is traversed on that basis.

Consequently, in view of the present amendment and in light of the above comments, the amended claims are believed to be in condition for formal allowance, and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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